

ABSTRACT

Airport concrete pavement is designed with the preset strength safety levels different for critical and non-critical zones. The choice of these levels is based on the analysis of test results of thousands precast and prestressed structural members, mainly prestressed floor and roof slabs. Strength safety of pavement is equivalent to safety of design flexural strength of concrete estimated as a part of modulus of rupture. Thickness design of pavement with the preset strength safety level allows more complete utilization of flexural strength of concrete than that provided by the current design practice. Thickness of these pavements is less by 8-10% and 5-10% for critical and non-critical areas of airport, respectively, than that provided by thickness design according to the Portland Cement Association Engineering Bulletin EB 050P. It can be applied to any other methods of thickness design of concrete pavement, including "Guide 2002", as well as for PCA method.